QZX

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EDITOR'S NOTES

K5XY

Proof reading is never done. Ten seconds after I glanced at the last issue after sending it out, I spotted two misprints. One was in my own name too.

This issue is technically the first in a new volume. It is the December issue, the first of Volume 12. Unfortunately this is being written in April. Fortunately you have already received the QZX calendar for 1994.

Obviously I am back in the USA, having returned from Ghana in the middle of April. The trip was quite successful. At least quite a few people learned something about nuclear electronics. Nuclear electronics is just like ham radio electronics with a slightly different emphasis. With the advent of packet, one cannot even say that there is more of an emphasis on digital electronics. There is a little more emphasis on analog to digital converters however.

The interesting thing is that I found a Spectrum computer in the lab with which I was working. I was working for the International Atomic Energy Agency on assignment to teach a course for the Ghana Atomic Energy Agency. The lab I was connected with was charged with computer interfacing and instrument repair. As such it was well supplied with computers. There were about five MSDOS 386 computers connected to an HP laser printer by a local area network. There was also an uninterruptable power supply in use. A wise precaution because the power went off a couple of times while I was there.

The interesting part for the readers of this magazine is that I found back in the corner a complete Spectrum computer. It had been sent to Ghana some years before by the IAEA to serve as the main computer for the laboratory. Unfortunately nobody there knew how to use it now. The power supply was lost and nobody could find the instruction manual. That was too bad because our computers have what is still a good BASIC interpreter and people needed practice in using a computer language.

I wish I could say that the laboratory would have been better equipped at a lower price if it had been using Sinclair computers, but I could not. Cheaper, perhaps; but better, no. There is no Sinclair computer which would have run the spectral analysis program which the IAEA supplied.

The big hit of the course was the program Electronics Workbench which I had brought along. It will run on an MSDOS or windows computer. It will run on a Macintosh, but it will not run on a Sinclair. One of the features of this program is its ability to draw circuit diagrams easily. Some programs for the Sinclair can do this too (see the May 1988 issue), but this program will tell you what the circuit will do too. For more details see the complete review inside this issue.

UNCLASSIFIED ADS

WANTED: UNCLASSIFIED ADS for publication in QZX. Cost is 1 cent for each keystroke (characters, blanks, etc.). Payment must be included with

order. This is an excellent way to sell your program or unwanted equipment, ask for help, or find a specific program. Send your ad with payment to QZX, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE: PC-DRAW a printed circuit designer for the TS2068. See review in QZX for 1988 May. $9.00 postpaid. A. F. Burr, 2025 O'Donnell, Las Cruces, NM 88001.

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ELECTRONICS WORKBENCH

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Electronics Workbench is billed as the electronics lab in a computer by its creators, Interactive Image Technologies, LTD, 700 King Street W, Suite 815, Toronto, Ontario, Canada M5V 2Y6.

It comes in three main versions, an MSDOS version, a Windows version, and a Mac version. The windows version requires an IBM AT or PS/2 or compatible computer with an 80386 CPU or higher. A math coprocessor is optional. The machine must have Windows version 3.1 or higher and Windows compatible system hardware. It must have a least 2 megabytes of random access memory (RAM), a hard disk, and Microsoft compatible mouse and installed mouse driver.

The program comes on three 3.5" compressed disks so there must be several megabytes of free space available on the hard disk. The installation itself is quite easy, just put in the disks when asked for them and let the install program run. However, if you want to take it off or move it to a different directory, you must use the uninstall program included.

Electronics Workbench is an electronics lab in a computer. You can easily build an analog or digital circuit schematic, attach simulated test instruments, and turn on the power to see how it works. Circuit behavior is simulated realistically, and the results are quickly displayed on the multimeter, oscilloscope, Bode plotter, logic analyzer, or whatever instruments you have attached to the circuit.

Electronics Workbench has two modules, one for analog circuits and one for digital. The modules are separate but similar - once you have become accustomed to one, you will quickly feel comfortable using the other. As its name implies, Electronics Workbench is modeled on a real electronics workbench. The large central workspace is like the breadboard, the parts bin, runs along the right side, and the test instruments are stored in a shelf along the top. Your build and test circuits entirely on the workspace using the mouse and menus. Everything you need is readily at hand.

Defective parts, limited access to instruments and the possibility of accidents are part of life in a real electronics lab. Electronics Workbench not only removes these disadvantages, it provides powerful computational tools which go beyond what is found in a real lab.

It is cost effective. Equipping an

electronics workbench or laboratory can be expensive. Electronics Workbench simulates a lab at a fraction of the cost. And the endless supply of unbreakable components reduces the ongoing cost of materials.

It is a time saver. Building and testing circuits using Electronics Workbench is amazingly fast. If you have limited access to a real electronics lab, you can make the most of it be designing and testing circuits first with Electronics Workbench.

It is powerful. Since circuit behavior can be represented by mathematical models, and computers are good at math, using computers to simulate the activity of circuits makes a lot of sense. You can get accurate results quickly for most circuits. Plus, you will be able to use a Bode plotter (for frequency response plotting) and a logic converter (for conversion of truth tables and Boolean functions) which go beyond the capabilities of real test instrument.

It is accurate. Real components often do not have the values they are supposed to have. For example, a 10- K resistor is not exactly 10 K and two "identical" transistors may not be exactly the same. In Electronics Workbench, components are ideal, (if you want them to be) so the simulated values are the same as your calculated values.

If you are mainly interested in electronics theory, or if you do not have access to an electronics laboratory, Electronics Workbench can replace a real electronics workbench. But for hands-on experience, you will want to use it in conjunction with a real lab.

Even if all you want to do is prepare circuit schematics, you can save time by creating them with Electronics Workbench. You can then copy the screen onto the Windows clipboard, and use it in another application, such as on the next page of this review.

Unfortunately there just is not a program which will even come close to doing all these things on our computers.

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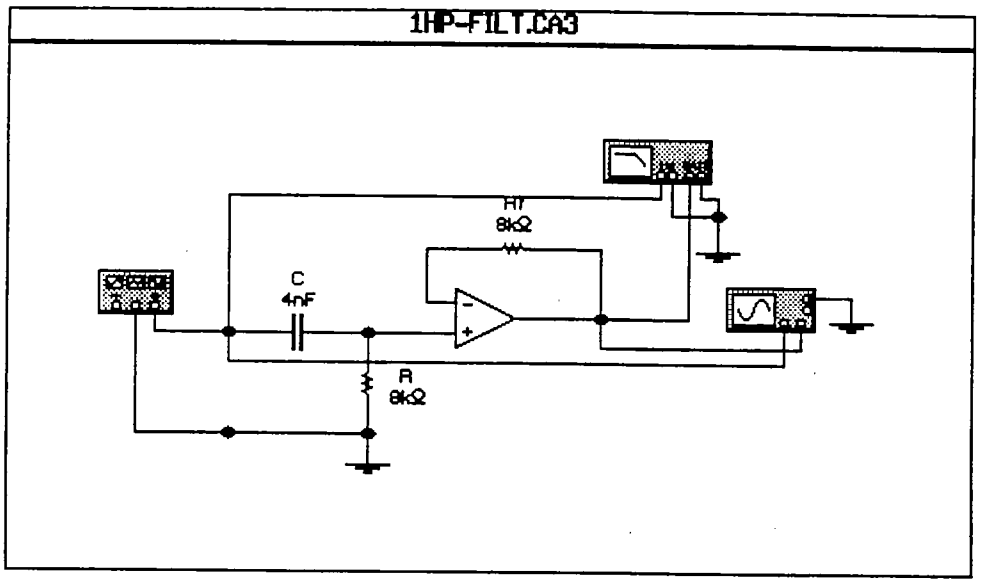

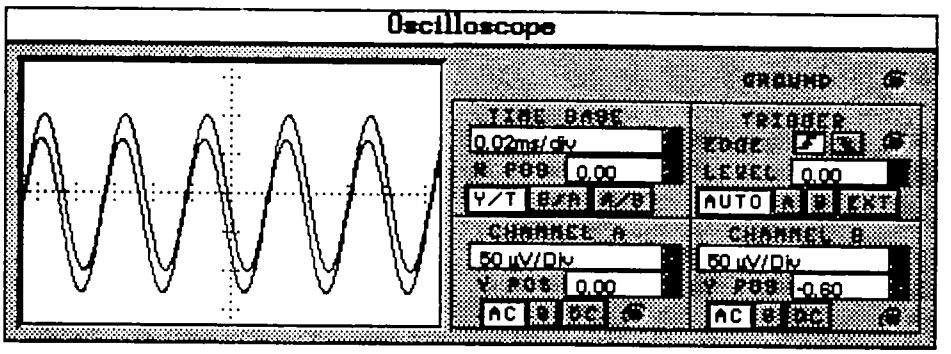

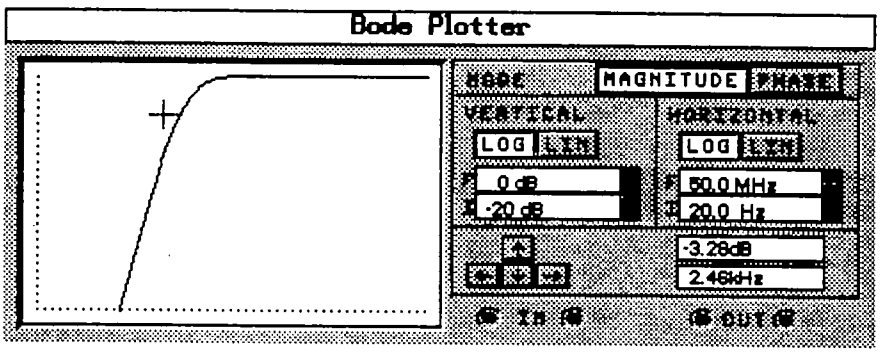

73, K5XY

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